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F4 Phantom II in Action

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F4 Phantom II in Action

by Lou Drendel

Squadron/Signal Publications

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INTRODUCTION

The **Aircraft in Action** series is a new concept. Between the covers of this book will be found some of the finest photographs of aircraft ever taken. Text has been kept to a minimum, since we feel that there are many books available dealing with the aircraft in detail, but lacking in photos that the discriminating collector and modeler is seeking.

These photographs come from many sources and show primarily aircraft under operational conditions. At least 90 percent of the photographs in this book have never been published before and it is our hope that you, the reader, will enjoy them for what they are.

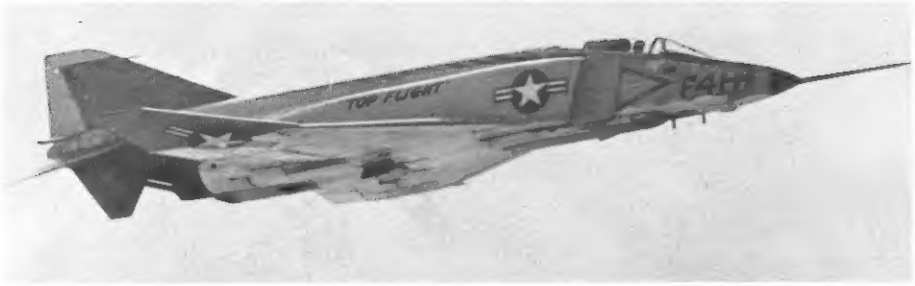
Lou Drendel, Uwe Feist

Introduction

The Phantom II began life on the McDonnell drawing boards in 1953 as a single seat, twin engine fighter/attack aircraft. The following year the Defense Department awarded a development contract to McDonnell for the project, designating the shipboard fighter the AH-1. The original version was to be armed with a battery of four 20mm cannon and powered by a pair of J-65 jet engines. In the eighteen months that followed this initial decision, the Navy changed its concept of what a shipboard interceptor should be. The new design called for a two man crew, air to air missile armament, and a more sophisticated fire control radar. It was also decided to install the more powerful J-79 engines. Designing a fighter that would fly slow enough to come aboard a carrier and fly at better than mach 2 created some novel problems for the engineers in St. Louis. The unorthodox appearance of the first of the pre-production batch of Phantoms to roll out of the McDonnell plant attested to the novel solutions to these problems. With its wingtips at 12 degrees dihedral and its stabilator at 23 degrees anhedral, the Phantom II was indeed unlike any of its contemporaries. But if the F4H-1, as it had by then been redesignated, caused any skepticism with its unusual appearance, this was quickly laid to rest. Flight testing proved the Phantom to be everything its designers had hoped . . . . and then some!

The Phantom entered squadron service in 1961 with **VF-121.** Besides proving itself a reliable fighter for the fleet, the Phantom soon began setting some rather spectacular performance records. These included a zoom altitude record of over 98,000 feet, a sustained altitude record of over 66,000 feet, closed course speed records ranging up to over 1,600 MPH, and time to climb records such as 29,000 feet in one minute! With statistics like these, it was no wonder that the F-4 began to attract attention from the other services and from abroad. Its adoption by the Marines and Air Force started the Phantom on the road to becoming the most produced modern day fighter. Its versatility as an interceptor or tactical attack aircraft contributed to its being bought by Great Britain, Germany, Japan, Israel, Greece, Australia, Iran and South Korea.

EARLY PHANTOMS–F-4A (top) has faired-in intakes used with lower powered J79-GE-3 engines. More powerful dash 8 engines required redesigned intakes. Both models have smaller nose used with 24" radar dish, and original canopy outline, later changed when seats were raised to provide better over the nose visibility for Pilot and Radar Intercept Officer. (via Paul Stevens)



RECORD SETTING PHANTOMS—F4H-1 (F-4A) above set altitude records. F-4A below, with Lt. Huntington Hardisty and Lt. E.H. DeEsch at the controls, set a low altitude closed course speed record of 902 miles per hour, in August of 1961. (U.S. Navy)

Dawn in the Med heralds the dawn of an illustrious career. **VF-74** Phantom is made ready for launch from the deck of the Forrestal. (McDonnell-Douglas)

Early production model of the Phantom test firing a Sparrow AAM off Point Mugu, California. F-4Bs were the first models to assume the by now familiar 'droop snoot' appearance, occasioned by the installation of the 32" radar dish and the infra-red heat sensor. (U.S. Navy)

The Marine Corps received its first Phantoms in mid-1962. A total of nine USMC squadrons were equipped with the F-4B. Shown here are two views of 149457, belonging to **VMF(AW) 314**, homebased at MCAS El Toro, California. (USMC)

In March of 1962, these two Phantoms were transferred from the Navy to the USAF Tactical Air Command for crew familiarization. This was as a result of a DOD directive to evaluate the Phantom in comparison to the standard USAF interceptor, the F-106. The F-4 won the competition easily and was adopted by the USAF as the F-110A. Mission differences dictated that a new model of the Phantom be produced for the Air Force, and in 1963 the first F-4Cs were delivered. F-4Cs carry an improved inertial navigation system and APQ-100 radar, which makes for a more accurate ground attack system. Air Force Phantoms are also equipped with dual controls. (Air Force philosophy calling for two Pilots vice the Navy crew of Pilot/RIO) (USAF)

F-4C testing the 20mm Vulcan gunpods on outboard wing stations. (General Electric)

Twin tongues of searing flame burn the Pacific air as, afterburners ablaze, this F-4B roars off the waist catapult of the USS Kittyhawk (CVA-63) during a tune-up cruise prior to 1968 Westpac deployment. Combined power of the Steam catapult and the Phantom's twin J-79s have accelerated the F-4 from 0 to 120 knots in less than 300 feet. (Lou Drendel)

A Phantom taxies to the elevator after recovery aboard the Kittyhawk, November 1968. (Lou Drendel)

Wave-off from the USS Franklin D. Roosevelt. With an ear-shattering roar, an F-4J climbs back to pattern altitude for another shot at a 'trap'. (US Navy)

Red Rippers. **VF-11** F-4Bs over the Med. 2980 rolls over his wingman (top) and joins up (bottom) for return to the USS Forrestal. Late model F-4Bs retain the infra-red sensor housing beneath the nose, though the sensor has been deleted in favor of avionics antenna. (US Navy)

Late model F-4J in the colorful markings of **VF-102.** Diamonds are red, as is the outline around the 'AG' tail marking. All lettering is black. A 600 gallon centerline drop tank is carried. The tank on the port wing pylon very likely is used to carry pilot's personal baggage. (R.M. Hill)

A Phantom from the USS John F Kennedy launching a target drone over the Mediterranean. Following F-4s will track the drone on target acquisition radar and try to shoot it down. (US Navy)

Two views of the late model F-4J for the Marine Corps. The 'J' has numerous improvements over the 'B', including AWG-10 pulse doppler radar fire control, improved AJB-7 bombing system, drooped flaps and slotted leading edges in the stabilator for better control at approach speeds, as well as a slightly larger fuel capacity. Note the position of the open drag chute door under the rudder. (USMC)

An F-4B of Marine Attack Training Squadron 101 (**VMFAT-101**). Rudder markings are dark green. (Peter B. Lewis)

An RF-4B of the Marine Corps. The first RF-4B (151975) is illustrated above. The white strip near the leading edge of the vertical stabilizer is an antenna for long range HF communications equipment, one of several modifications made to the standard F-4B airframe to convert it to RF standard. Other differences include: a battery of cameras for forward, side and oblique reconnaisance, infra-red and radar reconnaisance equipment and flash ejectors for night-time duties. (McDonnell-Douglas)

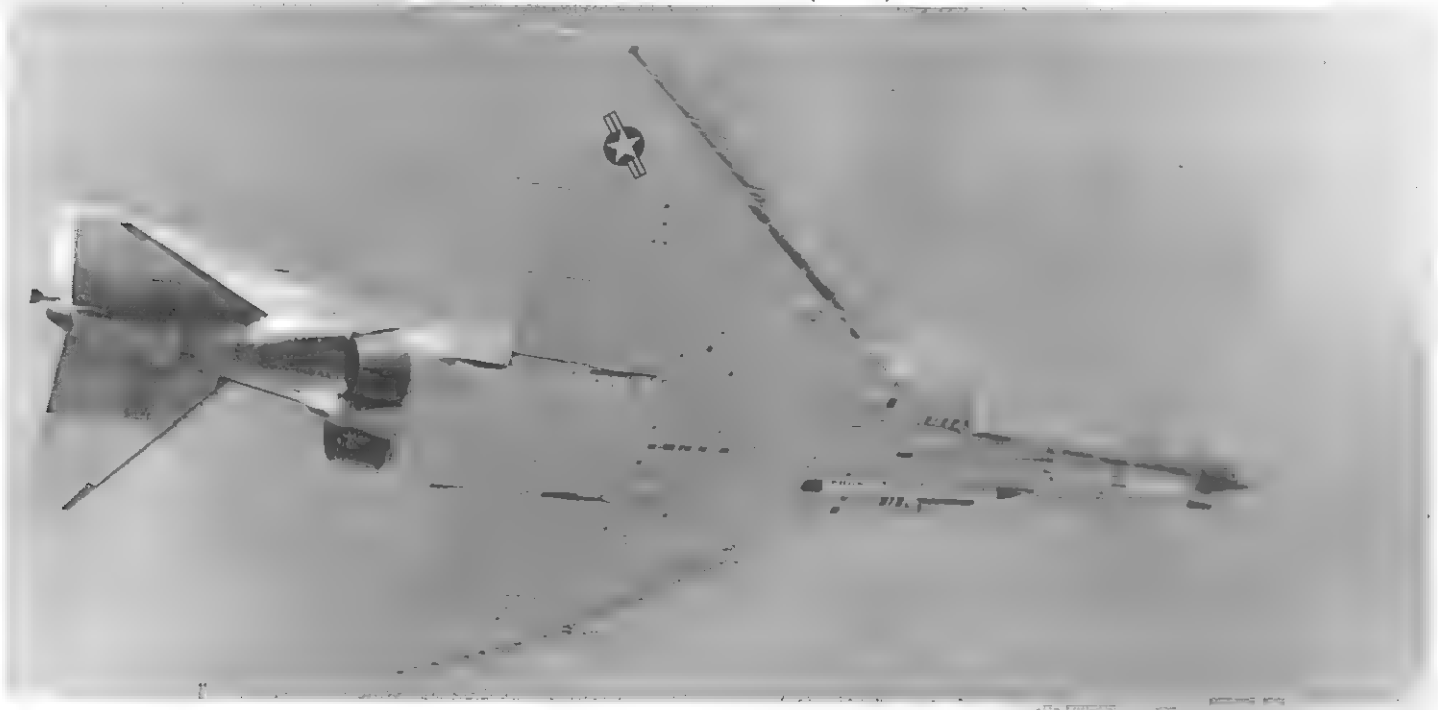
RF-4B of **VMCJ-2.** Colors of rabbit marking on tail are as follows: white rabbit on black square, red outline to square, red necktie on rabbit.

An RF-4C in Air Force livery. Primary differences between Air Force and Marine recce Phantoms include dual controls in the Air Force model and more sophisticated avionics.

F-4D of the **81st TFW** on final approach. The 'D' succeeded the 'C' on the assembly lines after a production run of 583 aircraft. Principal changes included an improved air-to-ground weapons delivery system. (Neal Schneider)

A Later model of the F-4D. Air Force Phantoms are equipped with an explosive cartridge starting system, enabling them to operate from airfields with less exotic maintenance equipment. Navy Phantoms, rarely called upon to operate from forward areas, do not employ this system. (Paul Stevens)

USAF F-4Es. The 'E' is the latest U. S. version of the Phantom to enter service. It will be operated by the Air Force only. The F-4E mounts a 20mm Vulcan rotary cannon under the nose, capable of up to 6,000 rounds per minute rate of fire. It also has the up-rated version of the J-79 engine, which puts out 17,900 lb of thrust. (USAF)



Late version of the F-4E, equipped with leading edge slats for greater maneuverability in dog fighting situations. (McDonnell-Douglas)

Public Relations Phantoms

In 1969 yet another gem of accolade was added to the tiara of Phantom accomplishment. It was selected by both the Blue Angels and the Thunderbirds for use in their respective repertoires of precision flight maneuvers. The selection of the Phantom was significant in both instances, but for different reasons.

For the Blue Angels, it was the first time in the team's 23 year history that they were not flying ■ Grumman aircraft. The Thunderbirds would be flying a Navy developed aircraft, in itself a tremendous compliment to the Phantom. Both teams would be flying a two seat aircraft for the first time.

The Phantom was not chosen without some misgivings by members of both units. It was felt that the size and complexity of the F-4 would present maintenance problems which could hinder the meeting of normally tight exhibition schedules. There was also concern over possible boundary layer control slipstream effect. The very size of the Phantom was a bit of a psychological problem for demonstration pilots at first. After all, when you are flying some of the exotic maneuvers used in the shows, and your wing is overlapping the leader's with only inches of clearance, you like to think that you are in a light, super maneuverable fighter.

The Phantom has more than overcome any hesitancy to praise on the part of its pilots. As it turned out, the size of the F-4 was an advantage, since it gives a much more stable ride in turbulence, and low level airshows on hot summer days are a preordained guarantee of a turbulent ride. The tremendous power generated by the twin J-79s enabled both teams to add new maneuvers to their shows, and the drag associated with the large airframe ensured immediate response when the throttles were retarded. The J-79 engines also accelerate much faster than the engines used in either team's former mounts. (4 times faster than the J-57 engines of the F-100s formerly flown by the Thunderbirds).

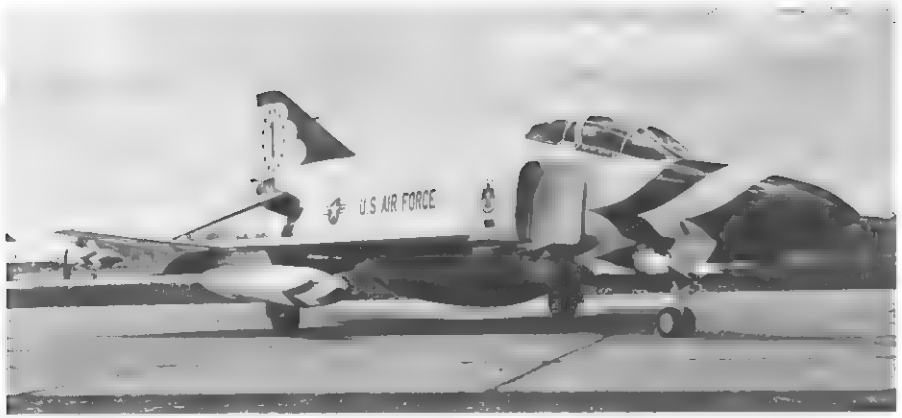
The Blues and the Thunderbirds have both made extensive modifications to their Phantoms. Both fly 'leadnose' versions of their respective models. Target acquisition radar and, in the case of the F-4Es of the Thunderbirds, 20mm Vulcan guns have been removed. In place of these standard items, the teams have fixed steel and lead pallets for ballast. Other modifications include: a reworked throttle quadrant, which allows selection of afterburner at 89% power instead of the normal 94%, VHF communications equipment for use in working with civilian towers, smoke and colored fuel dispensing systems, removal of radar repeater scope and gunsight from front cockpits, relocating of the inertial navigation system panel from the rear to the front (F-4E), and various minor technical 'fixes', dictated by the unique role played by these particular Phantoms.

Both teams fly with full nose down trim, (you have to feel the stick pressures this generates to believe it!) to reduce involuntary control movements. The Thunderbirds fly with oxygen masks and G-suits. The Blue Angels, in deference to their preflight march to their aircraft, do not. Since G-forces of plus 7.5 and minus 3 are fairly routine during shows, the lack of G-suits requires some pretty tight stomach muscles on the part of Blues team members.

The sheer size, speed and noise of the Phantom makes it, by far, the most impressive airplane ever flown by either team.

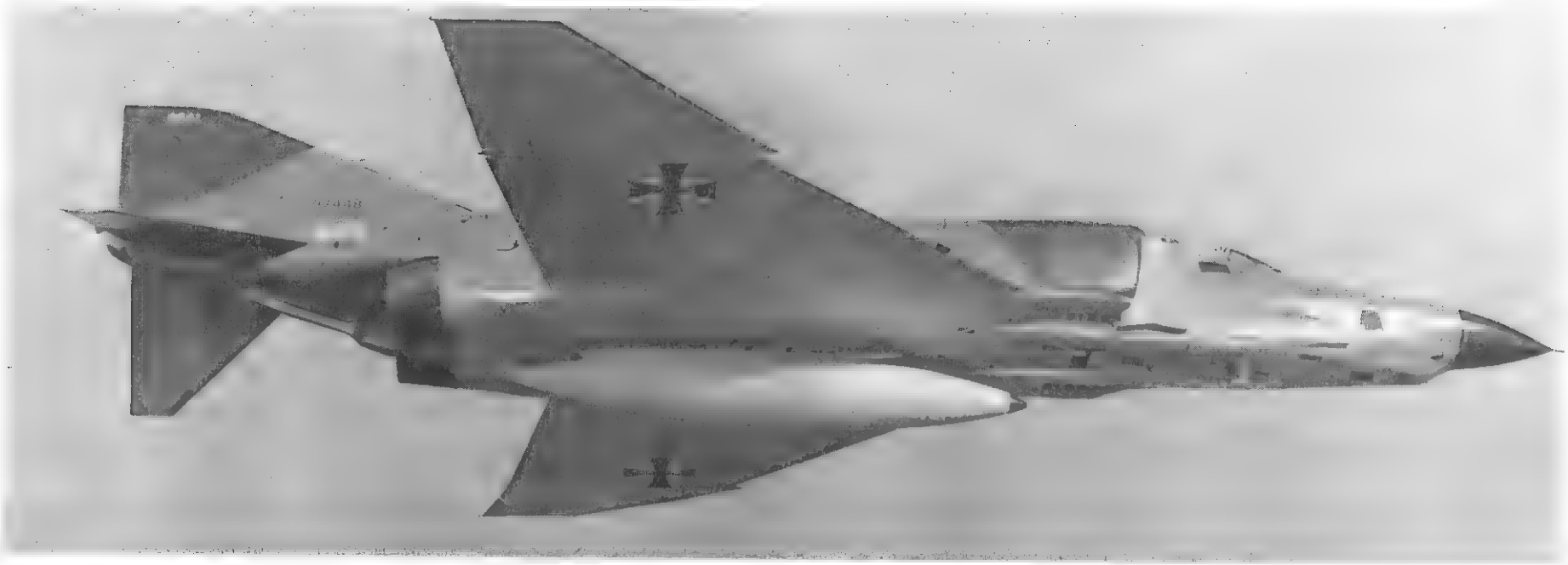
F-4J Phantom of Blue Angels leader Commander Bill Wheat, at Pax River in 1969. (David Oster)

The Blue Angels in their characteristic tight, 36 inch separation diamond formation. (US Navy)

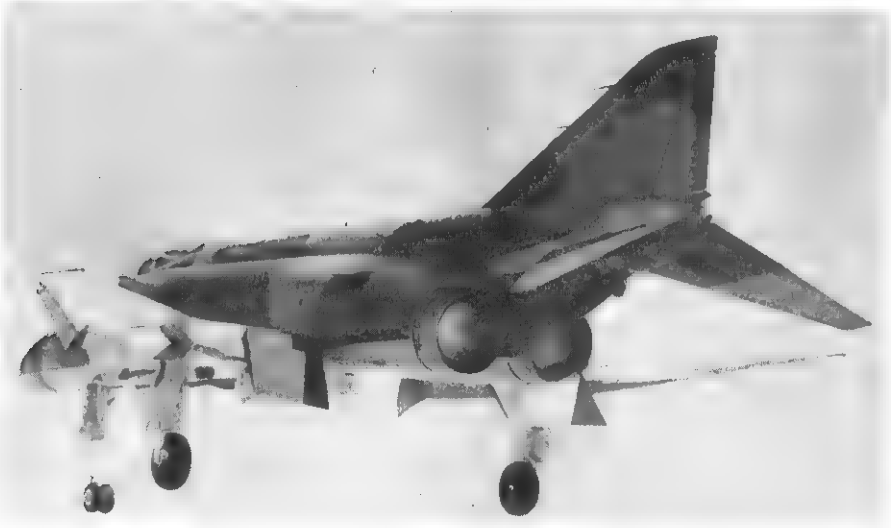


F-4E fresh from the factory for its 1969 debut with the U.S. Air Force Flight Demonstration Team, the Thunderbirds (above). The Thunderbirds' wedge formation (below). (USAF)

The Thunderbirds make a five plane formation pass at the 1970 DuPage County Airport show. Below, the Thunderbirds solo pilot makes a low level pass with everything hanging out to demonstrate the F-4E's low speed maneuverability. (Lou Drendel)

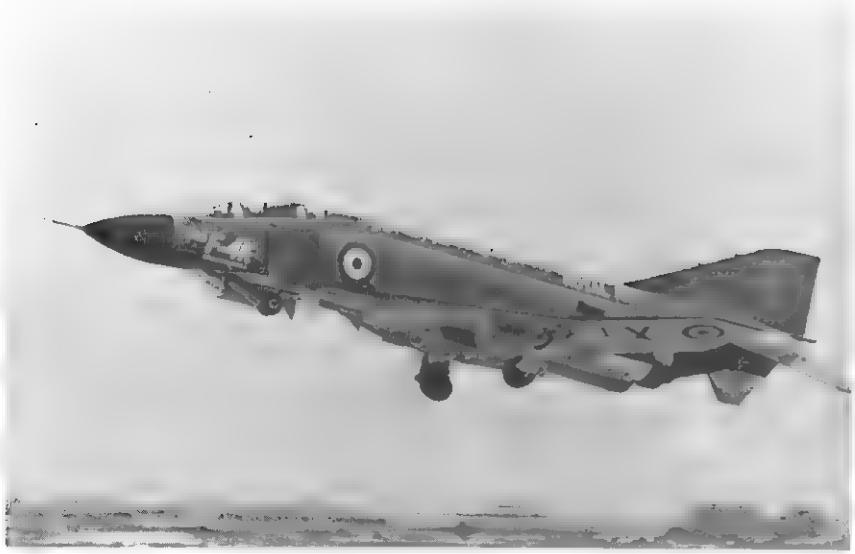


An RF-4E of the West German **Luftwaffe.** Germany is also flying the F-4F, an export version of the F-4E. (McDonnell-Douglas)



F-4M of the Royal Air Force. (McDonnell-Douglas)

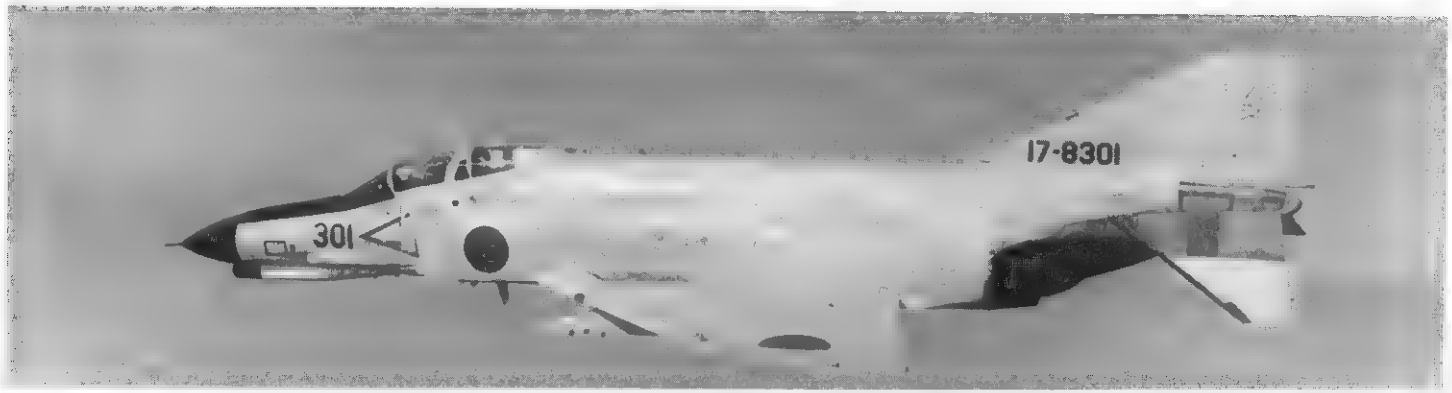
F-4M during gear retraction sequence. Also evident is the drooped flap configuration which provides additional lift during slow speed flight. (McDonnell-Douglas)



British F-4K on its initial test flight from Lambert Field. (McDonnell-Douglas)

F-4M at the end of a test hop. British Phantoms use the Rolls Royce Spey engine, which results in slightly different lines at intake and exhaust. (McDonnell-Douglas)

F-4K of the Royal Navy. (McDonnell-Douglas)



F-4EJ of the Japan Air Self Defense Force. This model is being built under license in Japan. (McDonnell-Douglas)

F-4D of the Imperial Iranian Air Force. The South Koreans also fly the F-4D. (McDonnell-Douglas)

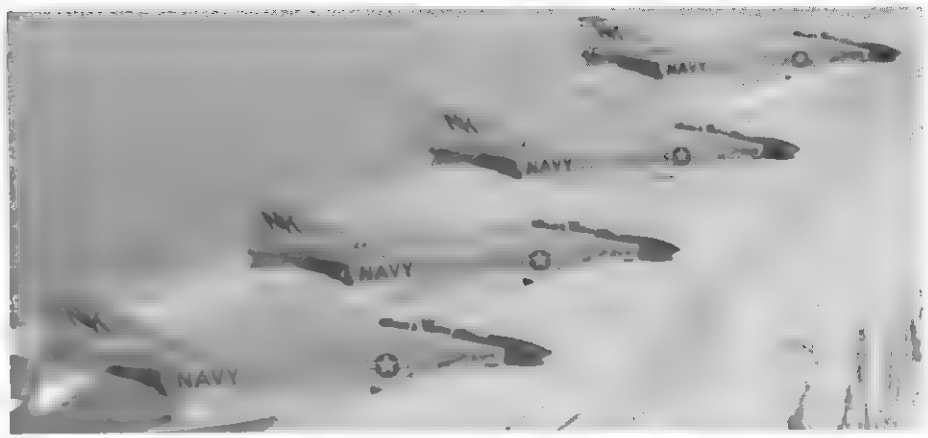
The Phantom Goes to War

The Phantom had been operational barely more than three years when it was called upon to prove its mettle in a shooting war. The Vietnamese war began to assume the proportions of a major conflict, and our aerial armed forces played a major role from the outset of hostilities. Unfortunately, the **ruse de guerre** chosen by the United States was one of 'graduated response' to North Vietnamese and Viet Cong acts of aggression. In a strategic sense, this was a disastrous course to follow, both politically and militarily. The consequences of this course are more than evident. In a tactical sense, Allied forces were able to give much more than they took, accomplishing nearly every task assigned to them. This was due, in large measure, to superior personnel and equipment. Certainly the F-4 Phantom has no equal in history when it comes to the diversity of missions it is able to fly, and fly well! But diversity aside, it was designed as a fleet air defense interceptor, and the Navy was eager to test the Phantom against the best the enemy had . . . . The MiG-21.

Lieutenant Commander Guy Freeborn shot down a MiG-21 on August 10, 1967. Freeborn had had plenty of experience in fighters before his fateful encounter with the MiG-21. He had made two cruises in F-3H Demons, spent a three year tour in **VF-121** as an Instructor, two years of which were spent teaching Air Combat Maneuvering, and had logged over 1200 hours in the Phantom. If the MiG pilot was North Vietnamese, it is doubtful that he could have approached Freeborn's level of competency.

Freeborn and his leader, Bob Davis, launched from the USS Constellation at 1145, climbed to rendezvous with a waiting KA-3B tanker, and topped off their tanks. Their mission was to fly cover for two strike groups, one from the Constellation, and one from USS Intrepid, which were to strike the Phu Ly transshipment point. As they dropped off the tanker, the two **VF-142** Phantoms banked to the northwest, and headed for North Vietnam. They reached their assigned patrol area, over the foothills west of Nam Dinh, and in loose combat spread formation, began a random left hand pattern orbit at 16,000 feet. There was an overcast at 22,000 feet, and since the GCI directed MiGs were expected to attack from above, the Phantom pilots had opted for a lower patrol altitude, hoping to spot the MiGs as they descended through the cloud deck. Even though the MiGs would have the altitude advantage, they would be in the transition from instruments to visual, and would momentarily be disoriented. In modern aerial combat, a few seconds of indecision can be fatal, and that is what the Phantom pilots were counting on.

The Constellation strike group hit Phu Ly at 1230. Davis and Freeborn were able to observe some of the activity, and as the strike group pulled off their targets, the MiGs appeared. The Phantom patrol heard several MiG calls, but despite continued and vigorous neck craning, they could not spot the enemy interceptors. The Constellation strike group was leaving the area, so they switched to the Intrepid frequency, and began calling the strike leader. Several calls went unanswered, so they switched back to Connie's frequency. They would learn later that the Intrepid strike had been weather aborted. As



A flight of **VF-142** Phantoms. The plane flown by Guy Freeborn in the action of August 10, 1967 is number 2247. (US Navy)

they completed a southerly leg and began a port turn back to north, they began to get MiG calls for their immediate area. The MiGs were above the overcast as expected, and the Phantom RIOs plotted courses to place the flight in a position to intercept them.

For Freeborn's RIO, Bob Elliot, this was only the ninth combat mission, and Guy kept reminding him to check their rear for MiGs. At that moment the radio seemed to erupt with the call, 'BANDITS! SOUTH 50!' This placed the MiGs about 15 miles directly astern of the two Phantoms, in perfect position to bounce them. Davis broke hard left, with Freeborn following and crossing under to maintain position. Just as he slid under Davis' Phantom, Freeborn thought he spotted something high overhead. He did a double-take and . . . . there was the unmistakable planform of one, then two MiG-21s. The MiGs had descended out of the cloud layer at 22,000 and were headed north at about 400 knots. They were gray and had no apparent markings, and were carrying wing tanks. As they had hoped, the MiG pilots apparently had not spotted them. Now the two F-4s were in perfect position for a classic six o'clock firing pass. Freeborn called 'MiGs, one o'clock high!' David rogered that he had them, as both Phantoms continued their hard left turn to pull into position behind the MiGs. They both went to afterburner and, with all firing switches set, rolled out directly behind the MiGs. The MiGs were flying the same approximate formation as the F-4s, with the wingman about 100 yards left astern of the leader. Davis called, 'I'll take the one on the right!' His RIO got a good lock on, and he squeezed off a Sparrow missile. Nothing! Nothing happened! Every second in this situation was precious, and Davis quickly selected HEAT. Meanwhile, Freeborn, with a new RIO had decided to attack with Sidewinder missiles. (The Sidewinder, a heat-seeking missile, can be aimed and fired by the pilot, without the aid of the RIO. The Sparrow, on the other hand, is radar guided and a radar 'lock-on' must be achieved by the RIO

before it can be fired). As Davis was attempting to fire his Sparrow, Freeborn got a good annunciator tone, and fired a Sidewinder. The missile dropped off the wing pylon, shot out ahead of the Phantom and, like a predator sniffing its prey, guided to the MiG. It exploded in a brilliant flash of flame just left of the MiG, which immediately began to stream either smoke or fuel. At about the same time Davis, with a good tone, fired a Sidewinder. It was practically a carbon copy of Freeborn's attack, as it too failed to explode close enough to the MiG to 'kill' it. Davis, again with a good tone, fired a second Sidewinder, which did not guide, instead going ballistic.

The MiGs, now aware that they were under attack, instead of breaking hard and reversing, began a slow weave. This increased the closure rate drastically and suddenly the two Phantoms were in danger of overshooting. Davis, closest to the MiGs, realized this and immediately executed a high yo-yo left. As he came back down on the MiGs, he lined up on Freeborn's target. (The MiGs had changed relative positions in their weave.) Freeborn, farther back, continued to bore in on his target, waiting until he was in sure kill range. Davis, now at 14,000 feet, got a good tone on the MiG, who was at 12,000 and in a 45 degree left turn. As the annunciator rose to a steady howl, he fired his third Sidewinder. It flashed out ahead of the big fighter and homed straight to the MiG's tailpipe. Without waiting to observe the results of his third missile, Davis fired a fourth. He needn't have bothered . . . . his third Sidewinder had done the job, and the fourth exploded in the ensuing fireball.

Freeborn, intent on his target, was surprised to see it explode before he had a chance to fire. 'The bastard shot my MiG!' he exclaimed to his RIO. But the other MiG was well within range, and Freeborn immediately turned his attention to it. The MiG was ahead of him and about a thousand feet lower. The MiG pilot, now aware that he was in deep trouble, was trying to reverse before the two U.S. jets could fire again. Freeborn spotted him as the communist pilot was cranking his nimble interceptor around in a hard, nose up left turn. The Phantom's nose went down as Freeborn cut the MiG's circle. Then, with a perfect tone, he squeezed the trigger. The tone remained steady, but nothing happened. 'Misfire! . . . .This just isn't my day!' went through Freeborn's head as he squeezed again. His third Sidewinder fired off the launch rails and, after a tentative wiggle, guided straight to the MiG. It seemed to disappear momentarily, then the MiG exploded in a fireball. The front half of the MiG emerged from the fireball and, as it decellerated, spun crazily toward the ground.

The action had occured in a matter of seconds and the Phantom crews were able to observe both MiGs impact on the enemy homeland. Neither MiG pilot ejected.

After the action, the victorious aviators continued northward. They spotted another aircraft, which they tentatively identified as a MiG, but it was five miles away and pulling away from the Phantoms. A quick check of their fuel state indicated that it was time to head for home anyway.

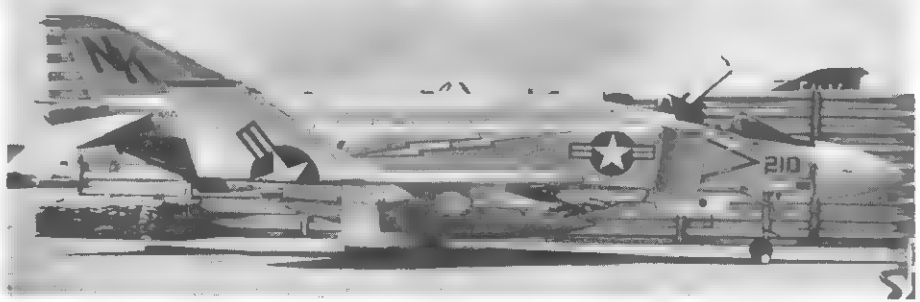
They banked away to the east and, with Freeborn constantly reminding his rookie RIO to 'check our six, we're not home yet!' they coasted out. Once again they made their rendezvous with a waiting tanker and, assured of enough fuel to get back aboard, headed for the Constellation.

Just prior to the action they had switched back to the Intrepid strike frequency, so no one aboard their ship knew of the twin killing. The first people to suspect something had happened were the deck crews aboard the carrier. The misfired Sidewinder aboard Freeborn's Phantom broke loose on landing and fell into the Gulf of Tonkin. Then everybody noticed the missing missiles of both F-4s.

The news spread like wildfire throughout the 5,000 man crew of the carrier, and the two crews were forced to tell and retell their story before they finally got to eat a belated lunch at 1530. At the time, the North Vietnamese didn't have many MiG-21s, so bagging two of them at a crack was something of a rarity and both crews were flown to Saigon the next day for a press conference.

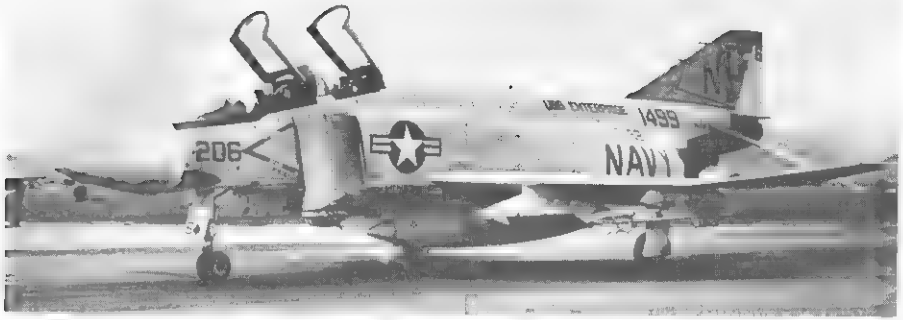
The F-4, in the hands of aggressive and talented fighter pilots, had acquitted itself brilliantly in air to air combat with the best the enemy had to offer.

Guy Freeborn and Bob Elliot after their MiG killing mission. (via Guy Freeborn)



VF-142 Phantom. Orange and white stripes on rudder, orange vertical stabilizer tip and wing tips. orange outline on NK. Lightning bolt is white with orange and black outline (via Paul Stevens)

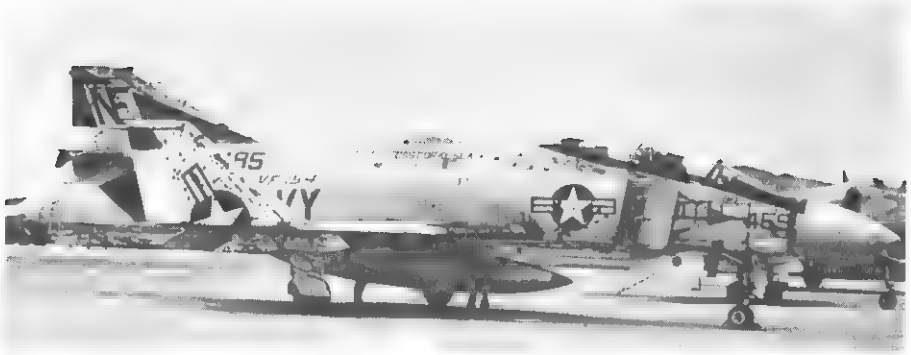
F-4 launching from the waist cat of the USS Independence for a strike on North Vietnam. (McDonnell-Douglas)



VF-92 F-4. Arrowhead and pawn on tail are yellow, with black outline. (via Paul Stevens)

Combat veteran of **VF-21**, with a late model AIM-9C Sidewinder missile fitted. (via Paul Stevens)

VF-96 Phantom, with tailhook extended. Black and yellow stripes on fin tip. (Douglas Olson)



Don't tell the crew of this F-4B that the flak isn't intense and accurate over North Vietnam. The severely mauled Phantom managed to limp back to Da Nang. (via Paul Stevens)

VF-143 Phantom, post strike at Da Nang. (via Paul Stevens)

VF-96 F-4J. **VF-96** aviators Lt. Randy Cunningham and Lt.JG William Driscoll became the first aces of the Vietnam war, downing their third, fourth and fifth MiGs on May 10, 1972. (Thomas S. Cuddy II)

VF-111 Phantom in markings carried during 1971 cruise aboard USS Coral Sea. (Harry Walker)

One of only 12 F-4Gs being hauled to a stop by Kitty Hawk's arresting gear. F-4G was actually the F-4B modified by the addition of Automatic Carrier Landing System. **VF-213** operated the F-4G over Vietnam in late 1965.

Red-shirted ordnancemen aboard USS Kitty Hawk wheel 500 pound 'Snakeye' bombs to a waiting Phantom for a 1967 strike against North Vietnam. (US Navy)

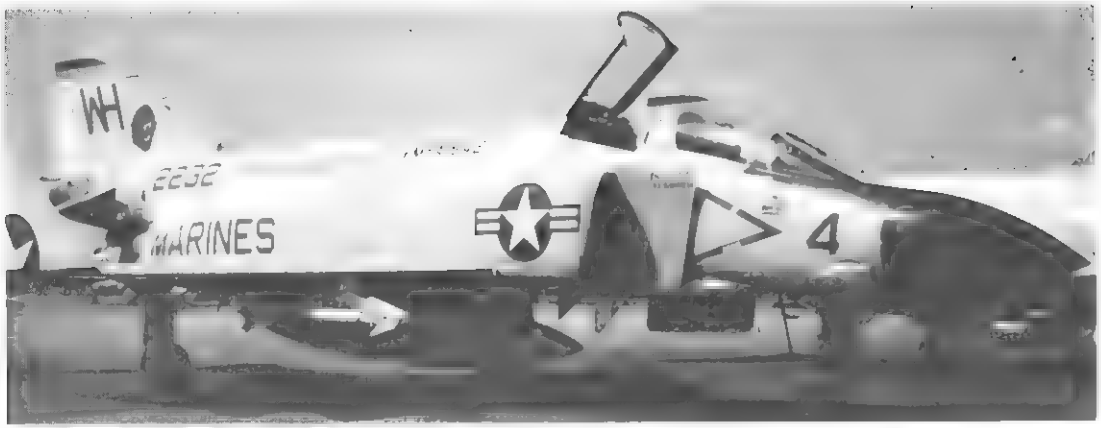
VF-33 Phantom, sans various antennae the F-4B later sprouted as Vietnam war experience was put to use in the development of ECM equipment. (Paul Stevens)

VF-213 'Black Lions' Phantoms enroute to targets in North Vietnam, 1968. (US Navy)

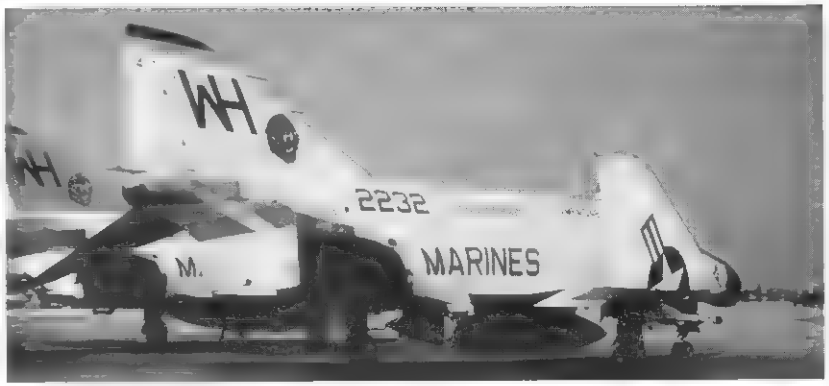
VF-114 'Aardvarks' Phantom, off USS Kitty Hawk. Orange fin tip, aardvark and fuselage stripe. Aircraft is on a MIGCAP mission over North Vietnam, circa 1968. (US Navy)

Lineup of **VMFA-314** F-4B Phantoms at Da Nang. The Marine Corps has used the Phantom predominantly in the ground attack role. Phantoms flown by Marine aviators played a major part in the close support operations undertaken by the 1st MAW in the I Corps area of South Vietnam. (Mike Serra)

VMFA-232 Phantom decellerates with the aid of its drag chute. (via Paul Stevens)



VMFA-542 F-4Bs configured for the air defense role. (Mike Serra)



VFMA-115 F-4B rolls out, post strike, Da Nang, 1966. (USMC)

VMFA-323 F-4B loaded for a strike. **MAG-13**, Chu Lai, South Vietnam. 1967. (USMC)

Marine Corps (former Navy) Phantom, with air refueling probe extended. The Navy uses the probe and drogue method of aerial refueling, largely because of the need to employ the 'buddy system', whereby another aircraft of similar type can be fitted with fuel tanks with extendable drogue. (Sgt. Norman Taylor)

Loaded for an anti-personnel strike, (note 250 lb. bombs, air-to-ground rockets) this Marine Phantom awaits the arrival of its crew. 1966 (USMC)

F-4B rotates off the runway at Da Nang as it begins a close support mission for **MAG-16**, Vietnam , 1965. (USMC)

A Marine Phantom recovers after a close support mission (USMC)

Air Force Phantoms in Combat

When the USAF swallowed its pride and decided to buy the Navy-developed fighter, it did so with a vengance. The Air Force was not particularly interested in another pure interceptor, for they already had the F-102, F-104 and F-106 in their inventory. But a fighter that would outperform any of these and carry 10,000 pounds of bombs . . . .well, that was something else, and the Air Force specification for its Phantoms reflected its intent to utilize the F-4's multi-mission capability.

The first F-4Cs were delivered to the Air Force in November of 1963, and their basic equipment showed clearly the philosophical differences between Navy and Air Force planners. The F-4C had dual controls, a much improved navigation system, a more accurate bombing system, and provisions for a more diversified ordnance loading. The Air Force had wanted a fighter capable of gaining and maintaining air superiority while performing in the close support or interdiction role. In the Phantom, they had what they wanted, and they would not have long to wait to test in combat the validity of their decision to buy The F-4.

The air war over Vietnam has more than vindicated the Air Force decision to buy the Phantom. Facts and figures have been recorded for posterity that will bear testament to the invaluable contributions made by the F-4 and her crews to the overall war effort. One of the more illustrious names linked with that of the Phantom in Vietnam was Brigadier General Robin Olds, who commanded the F-4 equipped **8th TFW 'Wolfpack'**. Robin Olds had made a name for himself long before he got to Southeast Asia. An All-American tackle at West Point, he went on to shoot down 24 German airplanes while flying 107 combat missions over Europe in World War II. After the war, he co-founded the Air Force's first jet aerobatic team, and placed second in the 1946 Thompson Trophy Race. He was the first foreigner to command a regular Royal Air Force squadron, the famous Number One Squadron, flying the RAF's first operational jet fighter, the Meteor.

Olds arrived at Ubon, Thailand on September 30, 1966, to take command of the **8th**. He immediately began to employ his unique brand of military charisma to the job of leading the **8th** in combat. Under his leadership the 'Wolfpack' would become the highest scoring unit in the pre-bombing halt air war. Olds himself would spend more time in the infamous 'Route Pack 6' area of North Vietnam than all but ■ few of his contemporaries. With credentials such as these, he is eminently qualified to comment on the tactics of the war in general, and the performance of the Phantom in particular.

When asked to compare the Phantom with its chief adversaries in the skies over North Vietnam, the MiG-17 and MiG-21, General Olds had this to say: 'Well, I think it's essential, first of all, to realize that our fighter aircraft, in most instances, were designed to perform a multitude of roles. The original purpose sometimes lent itself to the application of other roles, depending upon the nature of the conflict. For instance, the F-105 was designed primarily as a low-level, long range aircraft capable of navigating to, and dropping a nuclear weapon on a distant target, and returning home at a great rate of knots. The F-4 was designed primarily as a fleet interceptor, but it soon became evident that it was capable of performing a multitude of other roles as well. Now, when you think in terms of tactics, when you think in terms of conflict, you have to first consider where you are, who you're fighting, under what conditions you're fighting . . . .very primary principles such as these. In the case of the air war over North Vietnam, it was necessary for us to fly very great distances, carrying considerable loads of armament, to get to our objectives. Now, our aircraft had the capability to travel those distances, and do a job far, far from home base, and yet at the same time, when faced with an air-to-air combat situation, to engage in aerial combat over the enemy's 'home drome', so to speak. I think this must be clearly understood by anyone wishing to draw a comparison between our aircraft and theirs. The MiG-17 and MiG-21 were designed primarily as point intercept, or close-in defensive fighters. Each of them has a rather respectable capability in a clear air mass, and even some capability at night or in all-weather, particularly the MiG-21. The essential difference in their aircraft was size and weight. Their wing-loading, their thrust-versus-drag could be highly advantageous for fighting close to their own bases, putting us, in our heavier, larger aircraft in a very interesting, if not somewhat difficult situation, because while we fought in the vicinity of their bases, we still had to fight and keep enough fuel on board to get all the way back home. Now, let's look at their airplanes. The MiG-17; I didn't see much in the press, or in the stories coming out of Saigon about the MiG-17. I have seen stories that belittle the North Vietnamese air combat capability. Well, that's all very good and well for the armchair strategist and performance data analyzer, but I'll tell you, the MiG-17 was a vicious, vicious little beast! You have to remember that, heavily laden with bombs, and external tanks and all the things we were carrying, pressing in there with one objective, that is, a target which you are going to strike, it's all very well and good to advertise that the F-4 would go mach two and a little bit, or that the F-105 is the fastest thing, down low that was ever built—that's all very well and good. But you're not doing that with those bomb loads on board, not by ■ damn sight you aren't. You're going pretty fast, but you're not going as fast as the aircraft is capable of under other conditions, or circumstances. You're going at a speed where the MiG-17, as old as it may be, is is at its best. You're right in his speed range, so he can close with you, and once he closes with you, look out! Because he is so light, meaning that his wing loading is so light, his turn capability is just fantastic! You can't possibly turn an F-4 with a MiG-17. So, even though the F-4 is a marvelous air-to-air combat aircraft, it was no match for the MiG, if you tried to fight the way the MiGs fight. If you tried to fight in the classical, World War II sense of a dogfight, you just couldn't do it.'

When I asked General Olds about the quality of the enemy pilots, he had this to say:

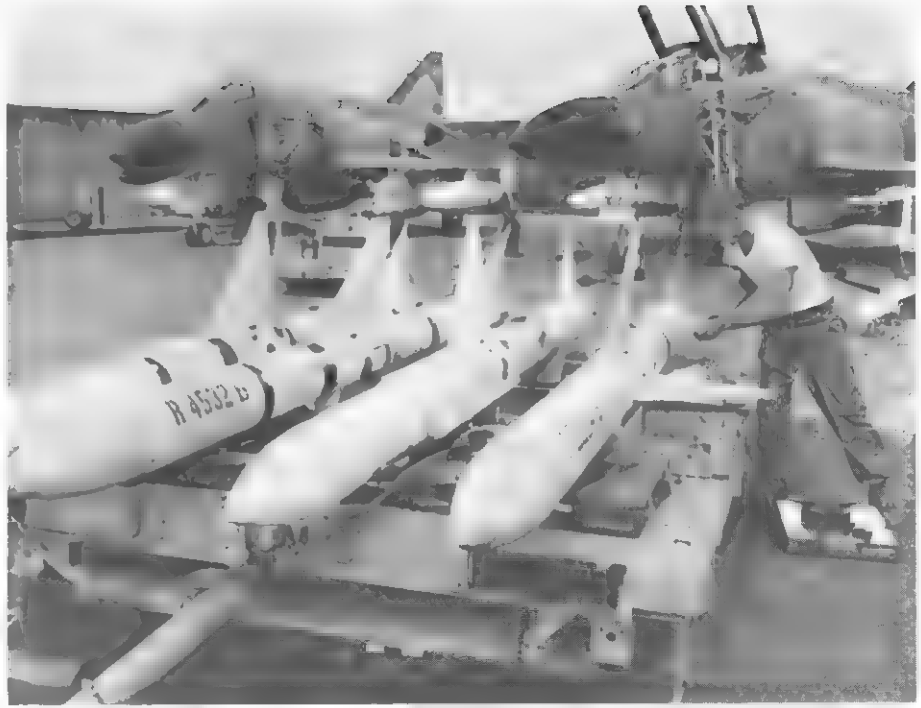
'I thought the pilots of the MiG-17s were pretty skilled, they were very, very aggressive. Many times, extremely aggressive. Now, of course, this situation varied. We knocked the beejeezus out of them in the month of May, 1967. We

had many, many battles, and we downed a lot of them. I think they kind of fell back into a corner of their hangar and sulked a little bit, and had a few head to head sessions on tactics. At any rate, we mauled them quite severely, and they disappeared for about four weeks. When they came up again, they seemed to come with renewed vigor, and different tactics. They learned their lessons, just as we learned ours, just as anybody learns, as a war progresses, to adapt to changing situations.'

When asked about our numerical superiority in the air war over North Vietnam, Olds replied; 'This numerical superiority gives a connotation that's completely false. Let me try to explain this. You're going in to strike on a target. Let's say you're going to hit the marshalling yard ten miles northeast of Hanoi. That's your objective. You may be going in with thirty six or forty eight airplanes. While you are going in, heading for that target, you're in his defensive environment. He has the options, his is the choice of engage or disengage, attack or don't attack, feint or hit. Plus, you as the attacker have got to go to this target. You haven't got any time for whirling around the sky, wandering about, and countering the threat, or looking for the foe. You've got to go according to your pre-planned flight briefing . . . .everything is laid right down to the second. This is because you've got to get to this target, and while you're getting there, you're going to be beset by MiGs, you're going to be beset by SAMs, and you know you're going to get a hail, a torrent of flak. Now all of these things are there to deter you, to keep you from reaching that target, or to make your losses over the target unsupportable. When you think in terms of the enemy, maybe he has only ten or twelve airplanes airborne, whereas there are maybe up to forty eight of you. But he can pick and choose where he's going to attack you. He has the complete advantage. You're just sitting there, and he can come in on you whenever he chooses. Once he has the advantage of altitude and speed, you're completely on the defensive, I don't care if there are a thousand of you! He can pick away at you. All that happens is, if there are a thousand of you, your percentage of losses goes down, but that doesn't help the guy that got shot down. So the fact that he was outnumbered really should be looked at in terms of the fact that a segment of our strike force would be struck by twelve MiGs. The segment of the strike force may be only one or two flights. So you've got four that are being attacked by twelve. A classic example of this was the 20th of May (1967) mission. Eight of us were flying a MIGCAP to a force of Thuds, going in to strike a target near the airfield at Kep, thirty five miles northeast of Hanoi. Well, we were hit by a force of sixteen MiGs. So you've got eight F-4s fighting sixteen MiGs, and I don't call that a superiority of numbers! Matter of fact, I like to think that if I'd been a North Vietnamese pilot—I'd have been an ace ten times over!'

'Well,' I asked, 'why did we then have a four to one advantage over them in aerial combat?'

He replied; 'Because we've got damn fine airplanes, because we've got training and discipline, because we've got skill, and I will add, leadership. Now, the MiGs found a strike force a tough nut to crack. They cracked it quite often, and what people don't realize is, though we ended up with a four to one advantage, there were times when we fought them to a draw. This was particularly true in the months of early 1968, just prior to the bombing halt. Now,



A USAF Weapons Specialist is readying Sparrow IIIB AAMs for loading onto F-4s. The Raytheon Sparrow is the primary armement of the F-4. The missile has ■ 60 lb HE warhead, and a range of 13 miles. It is radar guided. (USAF)

most people just don't bother to understand this, and you can sense, probably, that I get a little bit tweaked when I see evidence of a feeling that the advantage was accrued all to us, that it was, hell, a piece of cake! The MiGs were ■ damn severe threat! They were a worrisome thing, and time after time, you were in there fighting for your very life, not with the intent of shooting down a MiG, but just getting yourself, and whoever was with you, home in one piece!'

When asked about the overall anti-aircraft defenses of the North Vietnamese. General Olds had this to say; 'Our aerial campaign, Navy and Air Force, against North Vietnam, was conducted relentlessly. It was a show of determination. It was a show of Air Power and courage. We went in day after day, in fair weather and foul. It wasn't easy to do this. Our losses tell you that it wasn't easy to do this, but we were determined that we would not be stopped, we would not be turned from the target. We would hit those targets in spite of anything they could do! This has to be considered too. It was our own determination that kept us going up there. When you read, or when you hear someone like me say that the defenses in 'the barrel' far surpassed any but the thickest of those I saw in flying a year over Germany in World War II . . . .and I am in a position

The low level raid on Thai Nguyen. The Phantom of Brigadier General Robin Olds is shown on the run-in to the steel mills at Thai Nguyen. The three F-4s made their run-in (all the way from the Red River) at 25 feet. Note the assymetrical loading consisting of a 370 gallon fuel tank left outboard, 3 500lb Snakeye highdrag bombs on each inboard station, and an ECM pod on the right outboard station. The 600 gallon centerline fuel tank was punched off on crossing the Red River on the run-in. (Painting by the Author)

to compare . . . .you can believe it. I flew for a year over Germany, and I flew for ■ year over North Vietnam, and believe me, the defenses over North Vietnam made the German defenses look like a picnic, on a day after day basis. You get a SAM coming after you, just one little SAM, and believe me, your little eyeballs will start right out of your head, your adrenalin will pump at 3,000 psi, and your sphincter muscle will grab ahold of your adams apple. It's between you and that missile, and it's a deadly game of tag, and your timing has to be absolutely exquisite to avoid the lethal cone of the burst of that missile. You're dueling with an inanimate object, guided by radar. That is a soul-wrenching experience!'

General Olds had many of these 'soul wrenching' experiences in his year of flying over North Vietnam. During that tour he had occasion to encounter the A A defenses of North Vietnam also. One particularly 'hairy' mission was the low level raid on the Thai Nguyen steel works. It was the only low level raid of the war on Thai Nguyen, and was flown by Olds and two other pilots of the **8th TFW** on March 30, 1967. It is a prime example of the combat conditions the crews of the Phantom encountered over North Vietnam.

'Thai Nguyen lies in the northern extension of the delta that typifies the country from Haiphong to Hanoi. This delta continues on up to Phu Tho on the Red River and over to Kep some 35 nautical miles northeast of Hanoi. The delta is split in its northwest region by ■ sharp, jungle clad range of mountains that we called Thud Ridge. Thud Ridge is truly a massive geographical feature. Its crest at the highest point rises 5000 feet above sea level, and the surrounding countryside lies no more than 100 to 200 feet above sea level. There are no stark peaks or tors. Its slopes are very steep with few foothills leading up to its general mass. The entire massif is jungle clad, unbroken trees with secondary and tertiary undergrowth characteristic of the highlands in all of Laos and North Vietnam. The tall trees rise 150 to 200 feet in the air. The ridge runs in a northwest direction from the big airbase at Phuc Yen which lies at its southeast terminus. The countryside around Thai Nguyen is the line of demarcation between the perfectly flat delta and the mountains that ring the entire industrial and agricultural complex of North Vietnam. Our route to the target proceeded from a pass in the northern extremity of Thud Ridge due east to the delta land, then southeast to the steel mill. The last 15 miles are characterized by rice paddies in perfectly flat countryside interspersed with rocky, shrub covered hummocks rising 50 to 100 feet above the general terrain. These hummocks are scattered in no definable pattern.

The weather . . . .dark, rain laden clouds 500 feet above the ground. Rain showers and mist up against Thud Ridge and its foothills to our right, and against the more distant mountains off to our left. Ahead the visibility is good beneath the clouds, and the target is starkly outlined against a patch of lighter sky and the earth in the surrounding gloom. The rice paddies, the other vegetation, the clouds, the streams, the mist . . . .all combine in an impression of lush tropical wetness. No palm trees mind you, but dank and dark shades of green, broken by the more vivid light green of the rice paddies, and overladen with the sombre grays and dirty whites of the overlying clouds and the lower patches of mist. The extremely high humidity, coupled with our speed, produced vapor condensation trailing behind the canopy and off the wings. It was so heavy that the rear half of each aircraft was scarcely visible at times.

The target was a huge complex of a modern steel mill. Tall buildings with conveyor structures linked to the ore preparation sheds. A large complex of railyards, rolling mills and coal piles. Administration buildings and large traveling cranes . . . .and dominating the whole scene, from our vantage point of 25 feet, the three blast furnaces with their supporting steel structures, two tall chimneys, and surrounding tanks and buildings. These were our targets.

The flak. Oh God, the flak! The most heavily defended target in the most heavily defended complex on earth. Guns everywhere of every caliber . . . . machine guns, 37mm, 57mm and 85mm. Even some 100mm. On every one of the hummocks, multiple guns. On every piece of dry ground, guns. Most of them dug into pits or sandbagged. Disposed so that there was no way to avoid them. Every one of them firing, and the muzzle blasts standing out clearly in the gloom. I have seen flak at high altitude and at low level over Berlin, the Ruhr, Magdeburg, Stuttgart, Merseburg, Schweinfurt, Wurzburg and Tarnewitz. I have seen it come up to darken the sky in flame and smoke. I have seen streams of tracers mark the passage of every seventh bullet. But I have never seen the absolute sheets of fire that erupted in the skies of Thai Nguyen. A nearly solid wall of orange fire blazed in front of and all around us. This angry, spitting hail of death was interspersed with the explosions of the fused shells, the 37, 57 and 85mm stuff. You can tell which is which for the 37mm sparkles in an intense but small burst of smokeless white, the 57mm bursts are white too, but explode with a puff of dirty gray smoke. The 85mm burst with a large orange-red flash and a cloud of surrounding black smoke. My first impression was a somewhat detached thought that we would be lucky if one of the three aircraft made it to the target.

My own aircraft was hit two or three times on the run-in to the target. When I pulled up to 200 feet to drop my highdrag bombs, I received another hit in the right wing, about three feet inboard of the wing fold line and one and ■ half feet back from the leading edge. This was a good sized hit and I immediately started streaming fuel from the tanks in that wing. My wingman, Phil Combies, called to inform me that I was on fire. I am sure he mistook the streaming fuel for smoke, but I had no way of knowing that at the time. Phil, himself, took a hard hit on the right quarter windscreen. It left a hole about ¾ of a foot in diameter and he later found ■ piece of shrapnel as large as a man's open hand lying in the bottom of his cockpit.'

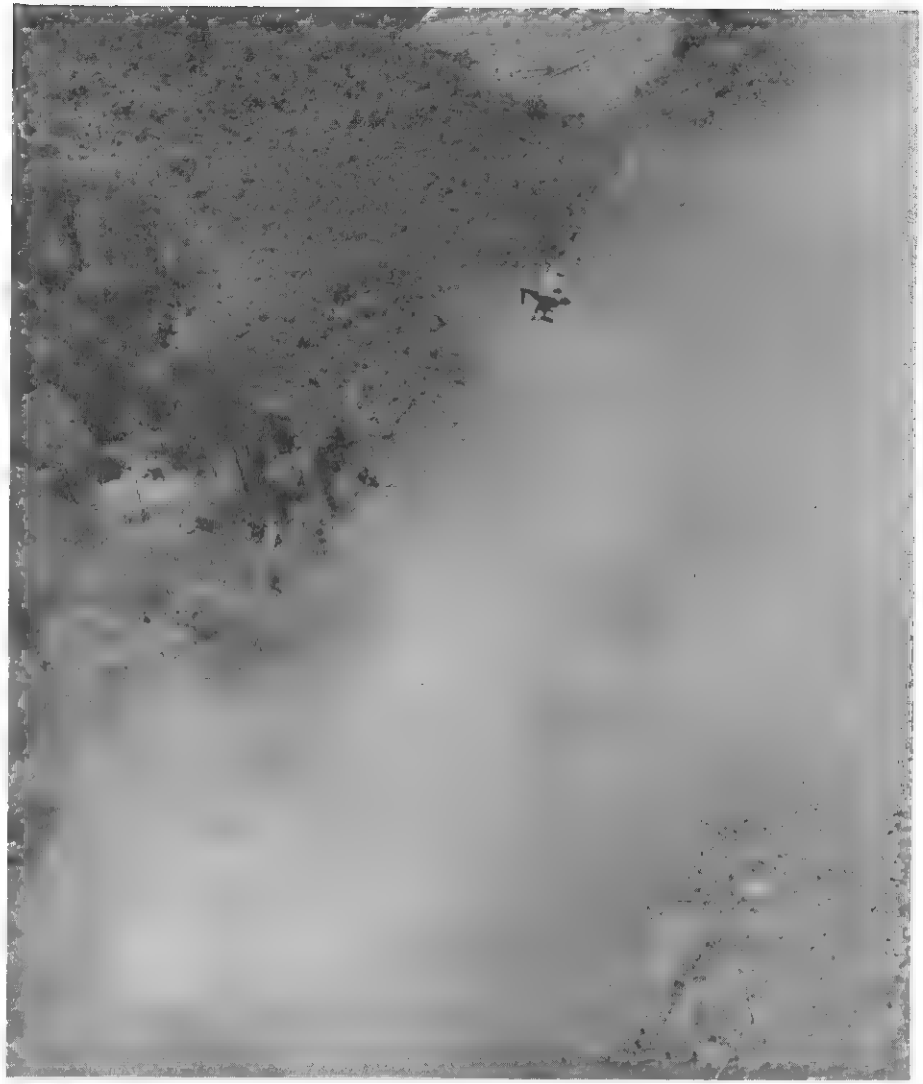
The three crews did deliver their ordnance successfully on the blast furnaces, and they did make it back to Ubon. General Olds earned his third Oak Leaf Cluster to the Silver Star for that mission, the citation reading, in part; 'exemplary airmanship, extraordinary heroism and indomitable aggressiveness.' Exemplary. Extraordinary. Indomitable. All fit General Olds, and all fit the F-4 Phantom II.

A well-worn Phantom enroute to a North Vietnamese target in July, 1967. (USAF)

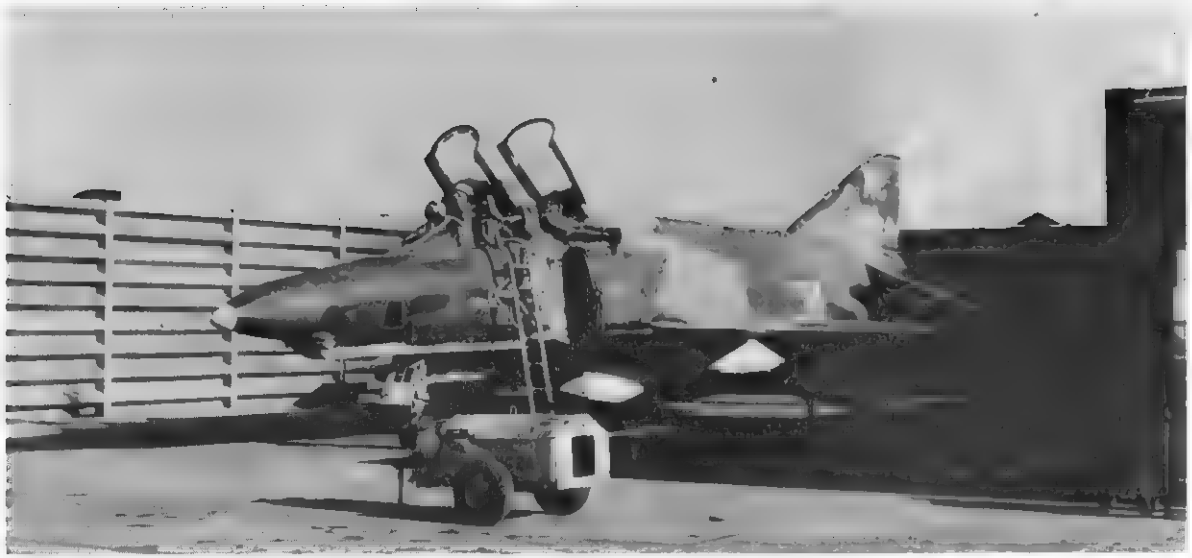
In-flight refueling. USAF strike aircraft would not have been able to carry out their devastating strikes on North Vietnam had it not been for the KC-135 tankers that serviced them inbound and outbound from their targets. (USAF)

The F-4 above is armed with the AIM-4 missile (starboard inboard station) the sophisticated follow-on to the Sidewinder, it had teething problems in early usage. (USAF)

Sharkmouth Scramble! Captain Ronald Flake, of the **421st TFS**, runs to his F-4E during an alert at Da Nang, September, 1971. (USAF)



Cambodian Strike. A Phantom pulls off the target after dropping its ordnance during the 1970 attacks on North Vietnamese sanctuaries in Cambodia. (USAF)



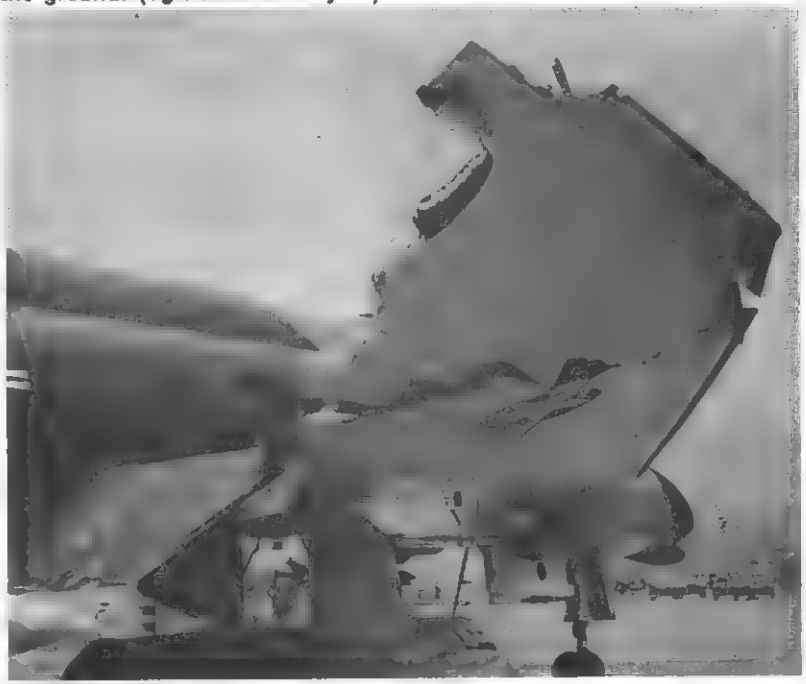
RF-4C of the **12th TRS, 460th TRW**, in a revetment at Udorn, Thailand. (Capt. Ward Boyce)

An F-4C, configured for a long-range MIGCAP mission, taxies to the arming pit prior to a mission from Da Nang. Phantom emblem on the splitter vane is black with white trim. The worn spots on the nose show up as light reddish-brown. (Mike Serra)

An F-4E of the **469th TFS, 388th TFW**, out of Korat, Thailand enroute to a target, May, 1970. (USAF)

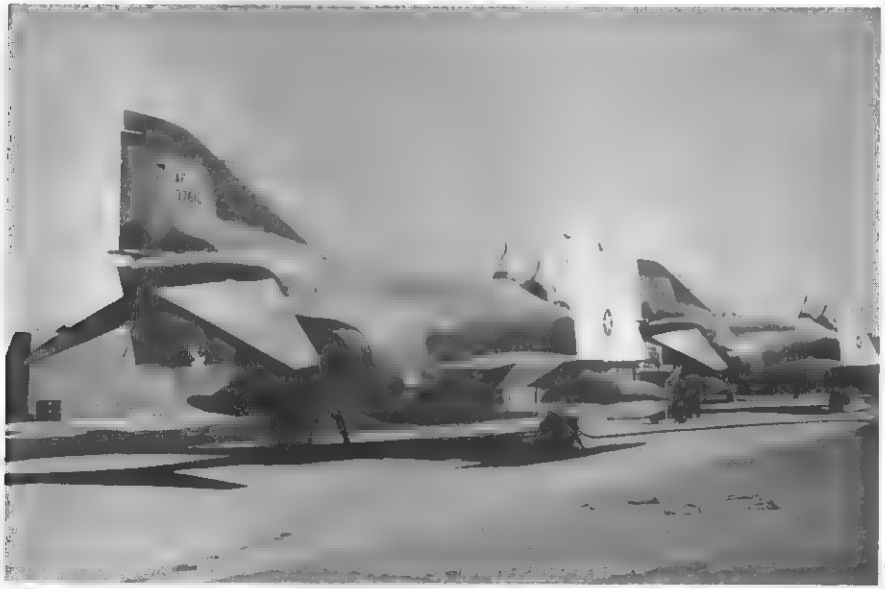
F-4Ds of the **389th TFS, 12th TFW**, at the arming pit prior to flying a strike mission from Phu Cat AB, May, 1971. The long fuses on the bombs insure that they will detonate above the ground. (Sgt. Norman Taylor)

Personal marking on an F-4D 66-7673A, of the **555th TFS**, at Udorn, Thailand. (Capt. Ward Boyce)

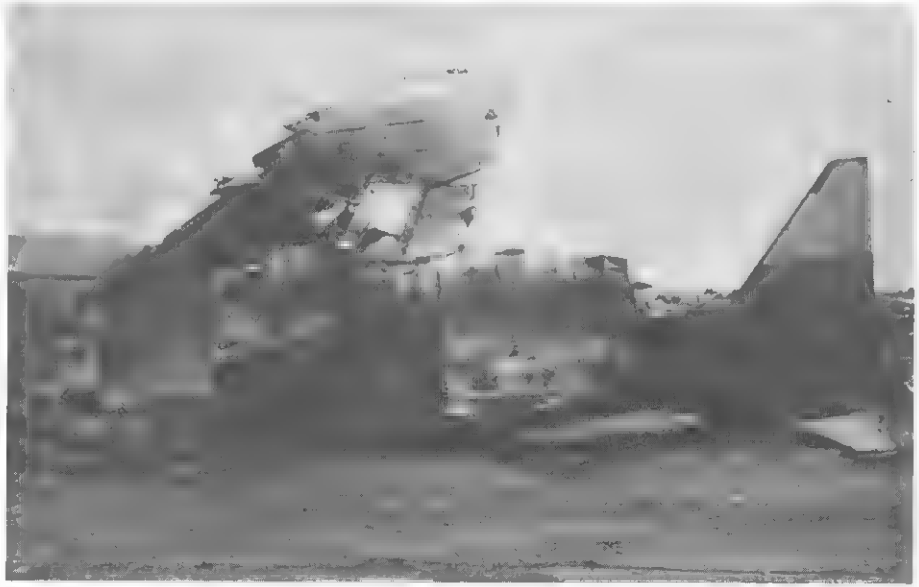


The consequences of too tight a formation, and the resulting mid-air collision while dodging SAMS. (Mike Serra)

F-4D of Brigadier General Darrell S. Cramer, CO of the **432nd TRW**. General Cramer was an ace in World War II, with 13 victories to his credit. Aircraft carries the tail code of the **555th TFS**. MiG kill markings on the splitter vane belong to the aircraft, not to General Cramer. Fuselage bands are blue (front) and red. This aircraft carries an ECM pod on the inboard wing pylon. (Capt. Ward Boyce)



Phantoms with fresh warpaint await their baptism of fire at Da Nang. (Mike Serra)



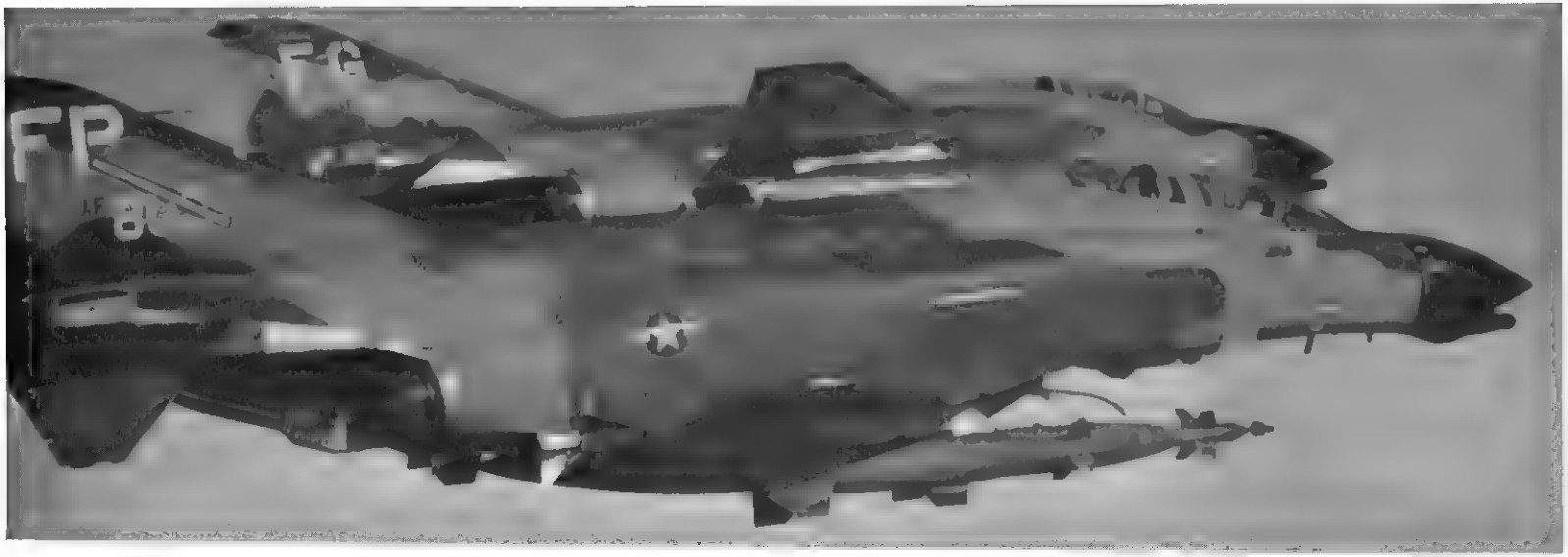
Demise of a proud bird when it crashed on return to Da Nang after receiving hits up North. (Mike Serra)

A pair of Ubon based F-4s of the **8th TFW** look on as an F-4 of the **432nd TRW**, based at Udorn, takes on fuel from a KC-135. November, 1971. (USAF)

F-4Ds of the **37th TFW** line up on the end of the runway at Phu Cat for a formation take-off. March, 1970. (USAF)

A thirsty F-4 eagerly climbs to accept fuel from the tanker boom, prior to a May, 1970 strike. (USAF)

F-4Es homeward bound after a 1968 strike. (USAF)



F-4Ds of the **8th TFW**, armed with Mk 84 laser-guided bombs, enroute to a target, November, 1971. (USAF)

A Phantom of the **497th TFS** dropping a laser-guided bomb. These bombs are part of a generation of new 'smart bombs'. Aircraft overhead is directing a high intensity laser beam on the target. 'Flyable' bomb will home on this beam. (USAF)

Enroute to targets of opportunity. An F-4 loaded for a close air support mission, South Vietnam December, 1971. (USAF)

A Phantom begins a mission against the Viet Cong, as it taxies from its revetment at Cam Ranh Bay. June, 1967. (USAF)

Vietnam Aces

On Easter Sunday, 1972, the Vietnam War entered a new phase. On that date, North Vietnamese forces launched an all-out invasion of South Vietnam, employing newer and more sophisticated weaponry than had been previously used by the enemy. Among the weapons the North Vietnamese carried with them into battle were heavy artillery pieces, both ground to ground, and ground to air, heavy tanks, and SAMs. It was the mechanized type of striking force most often associated with modern armies, and most vulnerable to aerial interdiction.

After five weeks of fighting, the United States made the decision to cut off enemy supplies at their source. It was decided to renew the bombing of North Vietnam.

The Nixon Administration, unlike the Johnson Administration, which had stopped it's less than satisfactory bombing of the North in early 1968, recognized the need to do the job correctly if it was to be done at all. The resulting decision to seal the port of Haiphong with aerial mines, and to attack North Vietnamese reserves of war material, as well as transportation lines and anti-aircraft defenses, caused an immediate furor, both at home and abroad. It was a direct confrontation with North Vietnam's major allies and suppliers of weaponry, the Soviet Union and Red China.

However, both of these major powers treated the new aerial assault on North Vietnam in a decidedly low-key manner, perhaps being unwilling to sacrifice any more for an ally that was a little bit too independent, and seemingly unwilling to negotiate a settlement to the war, even when given major concessions by the United States.

The new interdiction campaign against North Vietnam differed quite markedly from earlier efforts in several major areas. The North Vietnmaese had improved their anti-aircraft defenses quantitatively, but apparently not qualitatively, as the first B-52 raids deep into North Vietnam were carried out without losses. The United States had done its ECM 'homework' during the long bombing pause and, even though the enemy was firing hundreds of SAMs a day at strike aircraft, the U.S. bombers were getting through to, and destroying their targets.

The North Vietnamese air defenses had been beefed up with additional MiG jet fighters too, and more of them came up to challenge U.S. fighter pilots than ever before in the long air war over the North. This stepped up pace of air-to-air combat produced the first U.S. 'aces' of the war.

May 10, 1972 was a big day for U.S. fighter pilots over North Vietnam. Navy aviators knocked down seven MiGs, and Air Force fliers killed an additional three to set a record for MiG kills in a single day in the Vietnam war.

Three of the MiG kills that day were credited to Navy fliers Lt. Randy Cunningham (pilot) and Lt.JG William Driscoll (RIO). The duo had previously downed MiGs on January 19, and May 8, so the triple kill of May 10 made them the first aces of the Vietnam War. Besides being the first aces of the war, they also scored other notable firsts, including; first triple kill of the war,

Lt. Randy Cunningham and LtJG William Driscoll are returned to the deck of the USS Constellation after their triple victory and subsequent dunking in the Gulf of Tonkin. (US Navy)

first 'team of aces', and first U.S. all missile aces. The action that produced the first aces was fast and furious, beginning with an attack on Cunningham's flight by a pair of MiGs. Cunningham's wingman called for him to break. He broke into the MiGs and, as they overshot, Cunningham reversed and shot the first one down with a missile. As he cleared himself, he noticed another MiG shooting at a squadron mate. He called for the other Phantom pilot to break and, in perfect firing position, squeezed off another missile, which knocked the MiG's tail off sending it into an uncontrollable dive. As he turned to leave the area, Cunningham spotted another MiG coming at him. He dispatched his third victim of the day posthaste. With numerous other MiGs in the area, running out of missiles, and about to be attacked by the enemy aircraft, Cunningham went to afterburner and headed for the beach. Crossing the coast, his Phantom was hit by a SAM. He and Driscoll were forced to eject, but were plucked from the Gulf of Tonkin by the Destroyer Tender USS Samuel Gompers (**AD-37**). They were returned to the Constellation by helos from the Okinawa (**LPH-3**).

The first Air Force ace of the war is Captain Richard S. Ritchie, of the **555th TFW, 432nd TRS.** There was a fierce competition among Air Force pilots

Aircraft of **CVW-9** on the after flight deck of the USS Constellation prepare for a strike against North Vietnam on May 9, 1972. Note the MiG kill symbols on the vertical fins of **VF-96** Phantoms. (US Navy)

Cunningham (left) and Driscoll (right) discuss their MiG kills in the office of the Secretary of the Navy. Randy Cunningham became an ace during his second combat cruise with **VF-96**. It was Bill Driscoll's first combat cruise. Both of them hold the Silver Star, earned for previous actions. (US Navy)

to break the long-standing record of four MiG kills set by Brigadier General Robin Olds in 1967. Two Air Force pilots had tied the record. Ritchie, a pilot, and Captain Jeff S. Feinstein, a Weapons System Operator, or GIBS (Guy in back seat), both of the **555th**, were in position to become the first Air Force ace.

Ritchie got his chance on August 28, 1972, while flying a MIGCAP mission 30 miles west of Hanoi. Ritchie and his back-seater, Captain Charles B. DeBellevue, received information on 'bandits' from an airborne early-warning aircraft monitoring aerial activity in the area. DeBellevue plotted the MiG's position and gave Ritchie a bearing to intercept them. DeBellevue picked the MiGs up on the Phantom's radar and Ritchie made a hard, climbing turn to meet them head-on. The MiGs passed the Phantoms on a reciprocal heading, 4,000 feet above the American fighters. Ritchie turned hard again, and fired two missiles at the MiGs from 6 o'clock. The MiG Ritchie had fired at made a turn and evaded the two missiles, then firewalled the throttle and began to flee. He was still higher and pulling away, when Ritchie fired two more missiles. The first of the missiles went by the MiG to the left and, as the enemy fighter broke hard right, the second one got him, exploding the MiG in a huge fireball.

Captain Ritchie's kills had all been made in combat against the vaunted MiG-21, making him the first double-sonic ace.

The F-4 Phantom, after more than a decade of operational life, had become the mount of aces.

Captain Steve Ritchie, the first Air Force ace of the Vietnam War. A 1964 graduate of the Air Force Academy, Ritchie downed his fifth enemy fighter, to gain acedom, on his 338th combat mission, flown in two tours to the war zone. (USAF)

The Phantom's Future

The F-4 Phantom II series, as the most prolific of all modern fighters, (well over 4,000 copies to date) has certainly assured itself of a place in history. But what of the Phantom's future? The Navy will soon have the F-14 operational, and the Air Force F-15 will follow before long. With the great numbers of Phantoms currently in service with both organizations, it seems a safe bet that the F-4 will continue to serve both Navy and Air Force well into the seventies.

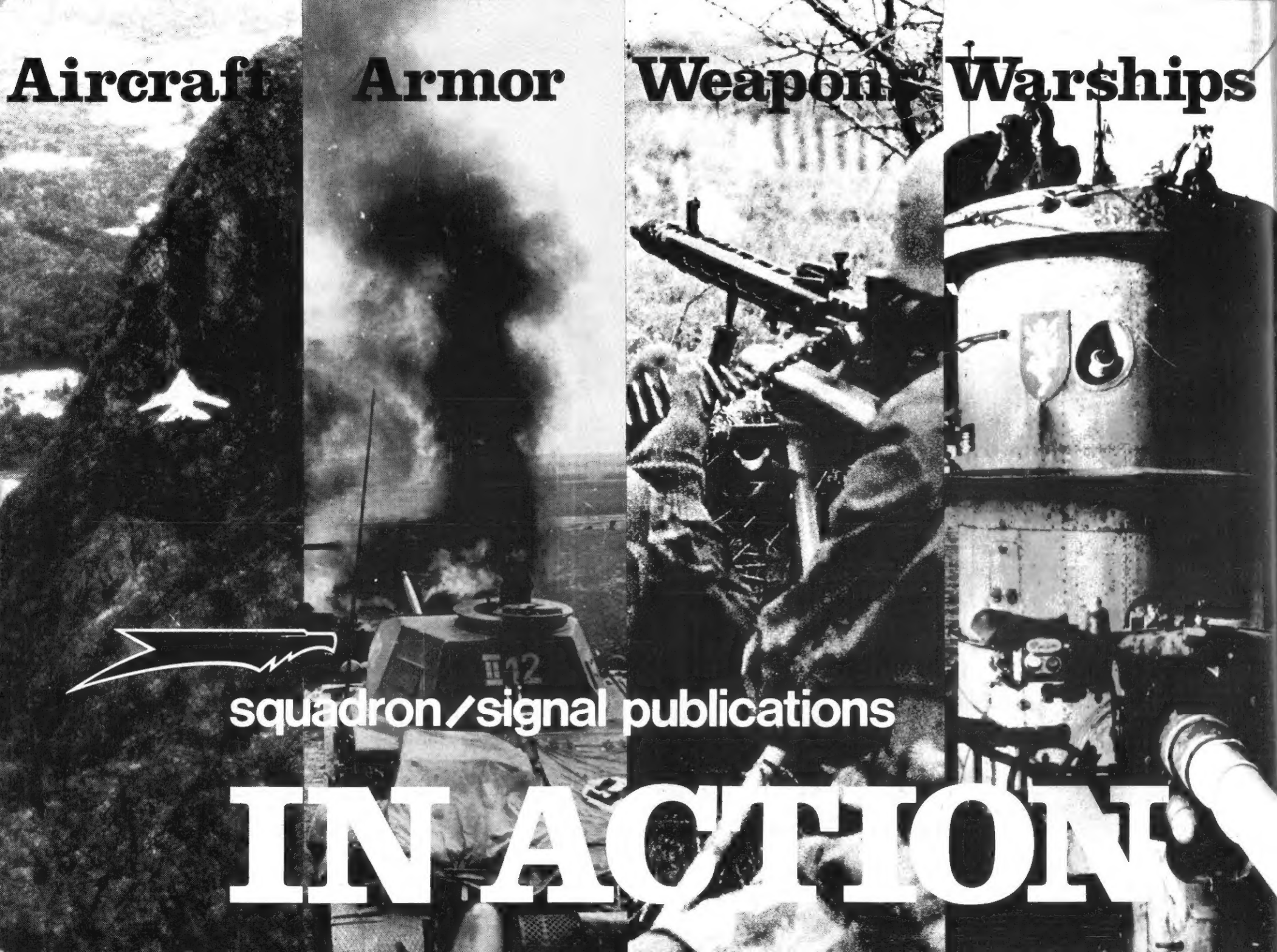
But the Phantom is showing its age. There are F-4s in mothballs at Davis-Monthan AFB, (see photo at top right) and the Navy has converted, or is in the process of converting 44 of its older F-4Bs to QF-4B drones, for use as remotely controlled targets. It expects to lose about eight of these per year. Even though the QF-4Bs sport the flashiest of Phantom paint jobs to date, (overall gloss insignia red) this seems a poor disguise for a rather ignominious end to a spectacular career. (See photo bottom right.)

The Phantom is now serving with Naval Air Reserve and Air Force National Guard units. The production lines remain open as more and more foreign countries queue up to buy their share of the fabulous McDonnell-Douglas fighter.

So the operational life of the Phantom is far from over. It will undoubtedly continue to impress more and more of the world's fighter pilots, friend and foe, with its versatility and reliability. The complete saga of the Phantom has yet to be recorded, and when some historian sits down, years from now, to do it, the feats of the Phantom will fill many volumes the size of this one.

An F-4B in mothballs at Davis-Monthan AFB, January, 1972. (Douglas Slowiak)

QF-4B undergoing tests at Point Mugu, California, April, 1972. (US Navy)


Aircraft
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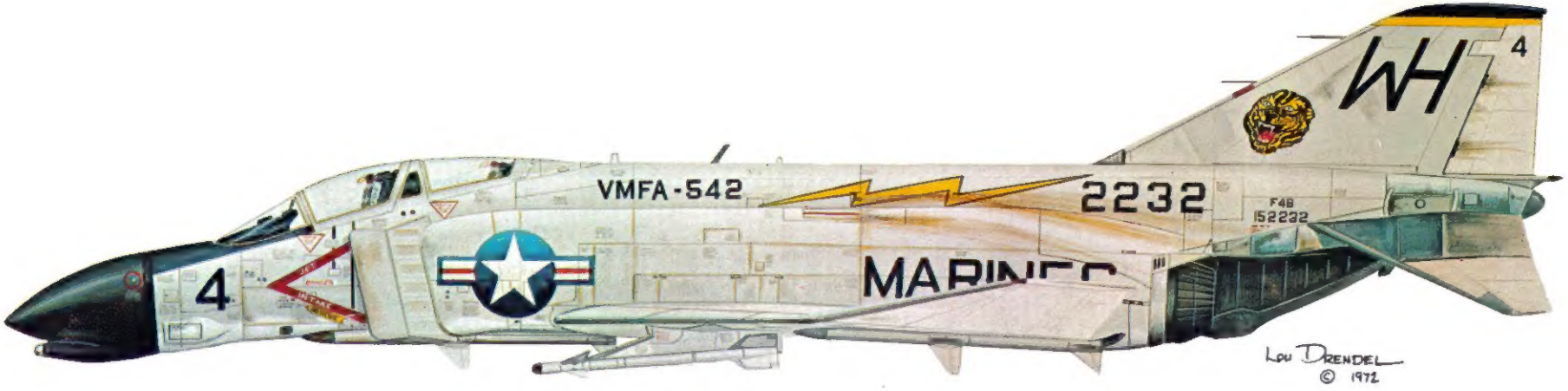
Weapons
Warships
squadron/signal publications
IN ACTION

F-4B of VF-111 "Sundowners"



F-4B of VMFA-542 "Bengals"

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